CLEAN DEVELOPMENT MECHANISM
SMALL-SCALE PROGRAM ACTIVITY DESIGN DOCUMENT FORM (CDM-SSC-CPA-DD)
Version 01

CONTENTS

Annexes

NOTE:

(i) This form is for submission of CPAs that apply a small scale approved methodology using the provision of the proposed small scale CDM PoA.

(ii) The coordinating/managing entity shall prepare a CDM Small Scale Programme Activity Design Document (CDM-SSC-CPA-DD)[1,2] that is specified to the proposed PoA by using the provisions stated in the SSC PoA DD. At the time of requesting registration the SSC PoA DD must be accompanied by a CDM-SSC CPA-DD form that has been specified for the proposed SSC PoA, as well as by one completed CDM-SSC CPA-DD (using a real case). After the first CPA, every CPA that is added over time to the SSC PoA must submit a completed CDM-SSC CPA-DD.

[1] The latest version of the template form CDM-CPA-DD is available on the UNFCCC CDM web site in the reference/document section.

[2] At the time of requesting validation/registration, the coordinating managing entity is required to submit a completed CDM-POA-DD, the PoA specific CDM-CPA-DD, as well as one of such CDM-CPA-DD completed (using a real case).

SECTION A. General description of small scale CDM programme activity (CPA)

A.1. Title of the small-scale CPA:

>> CUIDEMOS Mexico (Campana De Uso Intelegente De Energia Mexico) – SSC-CPA Form

Version 5
22nd July, 2009

A.2. Description of the small-scale CPA:

>> A typical CUIDEMOS Mexico small-scale CPA (SSC-CPA) will involve the distribution of up to 1 million free energy efficient light bulbs to households across a State or city in Mexico. The energy efficient light bulbs, in this case Compact Fluorescent Lamps (CFLs), will be made available for exchange for an equivalent number of incandescent bulbs, (which are comparatively energy inefficient), at a large number of retail distribution points within the project area covered by the SSC-CPA. The distribution process will be supported by an education campaign to ensure households are aware of the light bulb exchange offer and of the benefits of energy efficiency.

The light bulb exchanges will occur in retail outlets of PoA partners, Comex (leading hardware and paint retailer) and Coppel (large electric appliance retailer) within the SSC-CPA area. Comex and Coppel will provide a stand within the stores as well as between 2-3 employees to exchange the light bulbs and capture the general details of the customers into a Data Management System. Containers will be provided to store the collected incandescent light bulbs, which then will be sent to the central warehouse for destruction and recycling. Householders will be able to bring up to four incandescent light bulbs to these stores during the period of the campaign and exchange them free of charge for the same number of CFLs.
The exchange will typically be conducted for a period of approximately 30 days.

The incandescent bulbs collected during the exchange program will be gathered and later destroyed to ensure they can no longer be used. This process will be independently monitored and verified.

The contribution of each SSC-CPA to sustainable development in Mexico is significant.

Environmental Sustainability
(i) SSC-CPAs will support the Mexican National Strategy for Climate Change (May 2007) and several local and federal programs for energy efficiency

Each SSC-CPA will directly address the objectives and targets of the recently launched Mexican National Strategy for Climate Change:

a) To identify opportunities for emissions reductions and mitigation projects
b) Recognition of the vulnerability of different sectors and the need for projects to assist with adaptation.

In addition, projects will reinforce the energy efficiency campaigns of key institutions such as FIDE (Trust Fund for Electrical Energy) and Conae (National Energy Savings Commission) supporting the link between efficient energy use and greenhouse gas emission reductions.

Demand side energy efficiency has been highlighted by the Mexican government as one of the key areas to address in order to reduce greenhouse gas emissions and energy consumption[3]. SSC-CPAs clearly contribute to the achievement of these goals.

(ii) The project produces real and measurable reductions in GHG emissions:

Each SSC-CPA will utilize an approved methodology (AMS II.C. "*Demand-side energy efficiency programmes for specific technologies*") to ensure that all measurements of greenhouse gas emission reductions are robust, conservative and verifiable. The program will maintain high standards of monitoring to ensure that any emission reductions claimed are measurable and real.

Economic Sustainability
(i) The program utilizes more efficient technology (e.g. energy efficient, resource efficient) than common practice:

Each SSC-CPA will contribute significantly Mexico's economic sustainability through the more efficient use of electricity. Energy savings at both individual household and federal levels will make important contributions to economic efficiency and sustainability.

In order to meet rising demand, current Mexican national government forecasts indicate the need to spend approximately US$69 billion on new electricity generation infrastructure over the next decade, at a cost of approximately US$800,000 per megawatt capacity[4]. Demand-side energy efficiency improvements represent a highly cost effective approach to providing this required capacity. Households use 25% of all electricity generated in Mexico[5], with lighting comprising 40% of this consumption[6]. The project will directly reduce pressure on energy infrastructure during peak loads, with each SSC-CPA's capacity savings representing approximately US$19.5 million in deferred generation infrastructure investment.

Further, current government subsidies of electricity costs for low-income households are approximately 54%[7]; energy efficiency improvements will contribute significant savings to the Mexican government's spend on such subsidies. The installation of 1 million CFLs in a State will save approximately US$12.2 million a year in electricity consumption costs, benefiting both consumers in reduced utility bills (US$5.6 million p.a.), and government in avoided electricity subsidies (US$6.6 million p.a.).

(ii) The project results in technology transfer and/or capacity building in greenhouse gas emission reduction technologies.

[3] National Energy Savings Commission (www.conae.gob.mx), Trust Fund for Electrical Energy (www.fide.org.mx) & National Strategy for Climate Change, Semarnat 2007

[4] Prospectiva del Sector Electricos, SENER 2007-2016.

[5] http://www.fide.org.mx/medidas_ahorro/hv2.html

[6] http://www.conae.gob.mx/wb/CONAE/CONA_2043_aparatos_y_espacios_

[7] Average Price of $1.16 pesos/kWh during 2007, and price/cost ratio for residential consumers of 0.46. Reported in President's Annual Report, 2007 http://www.informe.gob.mx/2.14_ENERGIA_HIDROCARBUROS_Y_ELECTRICIDAD/?contenido=225

Each SSC-CPA results in significant transfer of more efficient appliances and technologies into Mexico. Whilst these technologies may not be new, uptake by residential consumers of technologies such as efficient lighting remains relatively low due to the general socio-economic conditions and low disposable income of the Mexican population. The program will address these consumer barriers by providing CFLs for free, resulting in mass consumer uptake and shifting residential efficiency and electricity demand.

Social Sustainability

(ii) The program helps to improve quality of life by creating opportunities for jobs, job enhancement, etc

In order to deliver each SSC-CPA, Cool nrg Mexico will engage (directly and through partnerships) a large workforce over the short to medium term, and will maintain a core team involved in customer relations, finance, project management and monitoring over the longer term. This team of employees will be trained in CDM project requirements, energy efficiency and consumer engagement. As such, Cool nrg Mexico will create a team of experts able to act as a centre of knowledge and experience within the country, and the SSC-CPA region.

As well as the direct financial benefit to households in terms of savings on their electricity bills each year, each SSC-CPA will also generate a range of less tangible social outcomes in education, awareness and collateral energy saving measures. This energy efficiency campaign will create an opportunity for collective action on climate change, enhancing a sense of community, and empowering individual households.

A.3. Entity/individual responsible for the small-scale CPA:

>> Here the information on the entity/individual responsible of the CPA shall be included, hence forth referred to as CPA implementer(s). CPA implementers can be project participants of the PoA, under which the CPA is submitted, provided their name is included in the registered PoA.

The entity or individual acting as the SSC-CPA implementer will be provided for each CPA submitted for inclusion in the PoA

A.4. Technical description of the small-scale CPA:

A.4.1. Identification of the small-scale CPA:

>> CUIDEMOS Mexico – CPA (insert number), “name of state/region”

A.4.1.1. Host Party:

>> Mexico

A.4.1.2. Geographic reference or other means of identification allowing the unique identification of the small-scale CPA (maximum one page):

>> Geographic reference or other means of identification[8], Name/contact details of the entity/individual responsible for the CPA, e.g. in case of stationary CPA geographic reference, in case of mobile CPAs means such as registration number, GPS devices.

Each SSC-CPA will be conducted in a different State or major city of Mexico. CFL distribution points are generally concentrated in urban areas, however, the light bulb exchange offer will be open to all households and residents within the specific State or city covered by the SSC-CPA.

Households participating in the SSC-CPA will be recorded in the project data management system. Names and addresses of all participants will be collected during the light bulb exchange process. The location of these households, as defined by their street address, will define the spatial boundary of the SSC-CPA.

Figure 1: Map of Mexico

[8] e.g. in case of stationary CPA geographic reference, in case of mobile CPAs means such as registration number, GPS devices.

A.4.2. Duration of the small-scale CPA:

A.4.2.1. Starting date of the small-scale CPA:

>> SSC-CPAs will be added periodically by the coordinating entity.

A.4.2.2. Expected operational lifetime of the small-scale CPA:

>> 10 years

A.4.3. Choice of the crediting period and related information:

Fixed crediting period

A.4.3.1. Starting date of the crediting period:

>> Future crediting periods for additional SSC-CPAs will commence after projects have been registered, implemented and monitoring has commenced.

A.4.3.2. Length of the crediting period, first crediting period if the choice is renewable CP:

>> 10 years

NOTE: Please note that the duration of crediting period of any *CPA* shall be limited to the end date of the *PoA* regardless of when the CPA was added.

A.4.4. Estimated amount of emission reductions over the chosen crediting period:

>> 242,838 tCO_2-e for a 10 year crediting period.

Year	Annual estimation of emission reductions in tonnes of CO_2-e
1	27,665
2	27,386
3	26,827
4	26,268
5	25,988
6	25,709
7	25,150
8	22,914
9	19,561
10	15,369
Total estimated emission reductions (tonnes CO_2-e)	242,838
Total number of crediting years	10
Annual average over crediting period of estimated reductions (tonnes CO_2-e)	24,283

A.4.5. Public funding of the CPA:

>> The SSC-CPA will not involve any public funding

A.4.6. Information to confirm that the proposed small-scale CPA is not a de-bundled component

>>

1. For the purposes of registration of a Programme of Activities (PoA)[9] a proposed small-scale CPA of a PoA shall be deemed to be a de-bundled component of a large scale activity if there is already an activity[10], which:

   (a) Has the same activity implementer as the proposed small scale CPA or has a coordinating or managing entity, which also manages a large scale PoA of the same sectoral scope, and;

   (b) The boundary is within 1 km of the boundary of the proposed small-scale CPA, at the closest point.

2. If a proposed small-scale CPA of a PoA is deemed to be a debundled component in accordance with paragraph 2 above, but the total size of such a CPA combined with a registered small-scale CPA of a PoA or a registered CDM project activity does not exceed the limits for small-scale CDM and small-scale A/R project activities as set out in Annex II of the decision 4/CMP.1 and 5/CMP.1 respectively, the CPA of a PoA can qualify to use simplified modalities and procedures for small-scale CDM and small-scale A/R CDM project activities.

In order to avoid registering a SSC-CPA that is in fact a de-bundled component of another CPA or CDM project, the coordinating entity will follow the guidance provided by the Executive Board in Annex 21 of EB 33 Report. The coordinating entity intends to implement multiple SSC-CPAs within Mexico, of the same sectoral scope – 3 Energy Demand. In order to prevent an occurrence of de-bundling, the coordinating entity will implement two approaches:

1. Ensure that where the same activity implementer is involved in two adjacent SSC-CPAs, their boundaries are not within 1km of each other at the closest point, as defined by the Executive Board in the aforementioned guidance.

2. Where different activity implementers are involved in the development of geographically adjacent SSC-CPAs, by definition de-bundling will not occur. However, the coordinating entity will ensure that there is no duplication or double counting (single households receiving CFLs from different activity implementers) between SSC-CPAs.

Further discussion of de-bundling is provided in the SSC-CDM-PoA-DD.

[9] Only those POAs need to be considered in determining de-bundling that are: (i) in the same geographical area; and (ii) use the same methodology; as the POA to which proposed CPA is being added

[10] Which may be a (i) registered small-scale CPA of a PoA, (ii) an application to register another small-scale CPA of a PoA or (iii) another registered CDM project activity

A.4.7. Confirmation that small-scale CPA is neither registered as an individual CDM project activity or is part of another Registered PoA:

>> No CDM project activities or PoAs relating to energy efficient lighting are currently registered in Mexico.

SECTION B. Eligibility of small-scale CPA and Estimation of emissions reductions

B.1. Title and reference of the Registered PoA to which small-scale CPA is added:

>> CUIDEMOS Mexico (Campana De Uso Intelegente De Energia Mexico) – Smart Use of Energy Mexico

B.2. Justification of the why the small-scale CPA is eligible to be included in the Registered PoA :

>>A typical SSC-CPA will be eligible for inclusion in the PoA if it meets each of the criteria outlined in section A.4.2.2. of the SSC-PoA-DD. Those criteria are as follows:

- Each SSC-CPA will involve the distribution of energy efficient lighting to households within the geographical boundary of Mexico.
- Each SSC-CPA must implement the baseline and monitoring methodology AMS II.C. *'Demand-side energy efficiency programmes for specific technologies' version 9*.
- The CPA is neither registered as an individual CDM project activity nor included in another registered PoA, and the CPA is subscribed to the PoA.
- The SSC-CPA has been uniquely identified and defined in an unambiguous manner by providing geographic information, and the start date and end date of the crediting period
- The SSC-CPA has unambiguously defined how leakage, additionality, establishment of the baseline scenario, baseline emissions, eligibility and double counting are dealt with in a robust and conservative manner.
- No other CPA or CDM project involving the distribution and/or installation CFLs is already registered and operating in the same, specific geographic area.
- The CPA satisfies debundling rules for PoA.
- Each SSC-CPA must be approved by the coordinating entity and DOE prior to its incorporation into the PoA.

B.3. Assessment and demonstration of additionality of the small-scale CPA , as per eligibility criteria listed in the Registered PoA:

>> The criteria to determine the additionality of each SSC-CPA as per the PoA are as follows:

- Confirm that at no stage were public or private announcements made regarding the SSC-CPA proceeding without use of the CDM (Gold Standard requirement).
- Define credible possible alternative scenarios relating to the distribution of CFLs relevant to the SSC-CPA.

- Ensure that the proposed SSC-CPA is not the only alternative amongst those considered that is in compliance with mandatory regulations.
- Complete an investment analysis to demonstrate that without CDM revenue the SSC-CPA is not a financially attractive option.
- Conduct a barrier analysis to demonstrate that the project activity faces significant barriers that are overcome through the CDM.
- Describe essential differences between the SSC-CPA and similar activities that are occurring.
- Demonstrate that ODA is not directly used to finance the SSC-CPA (Gold Standard requirement).
- Describe the technology transfer or knowledge innovation involved in the SSC-CPA (Gold Standard requirement).

An assessment of each of these criteria will be undertaken to ensure additionality is adequately demonstrated.

Previous Announcement Check
A proposed SSC-CPA must be developed as a CDM activity. At no stage will public or private announcements be made regarding the project proceeding without use of the CDM.

Additionality Tool
Additionality of the SSC-CPA is demonstrated using the criteria outlined in Attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities. As per Gold Standard requirements the UNFCCC's "Tool for the demonstration and assessment of additionality", Version 4 is used as the basis for the determination of additionality.

Step 1. Identification of alternatives to the project activity consistent with current laws and regulation

Sub-Step 1a. Define alternatives to the project activity

Three alternatives to a typical SSC-CPA have been identified:

I. The potential project could occur without being registered as a SSC-CPA through government or private sector support. In such a scenario the Mexican Federal Government, a State Government or private sector sponsor would purchase all CFLs and pay for their distribution at no cost to households. There are significant barriers to this alternative scenario. Most importantly, there is currently no budget within the Mexican energy or environment ministries for such an undertaking. In addition, there are no documented projects of the same scale in government project planning. Whilst in 2008 the Minister of Energy announced the distribution of 130,000 CFLs to indigenous communities in the states of Quintana Roo, Sinaloa and Sonora[11], there are clearly financial and planning barriers to the Mexican Government, or other sponsor, from undertaking a free CFL distribution of the same scale as that proposed under the SSC-CPA. The Mexican Government's own climate change planning documents provide the evidence of the planning and financial barriers exist to the Federal government undertaking the free distribution of CFLs on a comparable scale to that proposed by the SSC-PoA. The coordinating entity believes that the clear absence of a

[11] http://www.sener.gob.mx/webSener/portal/index.jsp?id=459

stated intention in the most recent National Climate Change Strategy to undertake a free distribution of CFLs strongly indicates that such barriers exist.

The National Climate Change Strategy makes reference to a desire to run efficient lighting programs in the future, however, these programs will take the same form as the Ilumex program conducted between 1995 and 1997. As discussed in the proceeding sections, these programs do not involve free distribution of CFLs, but rather consumers purchasing CFLs through staged payments made in conjunction with their electricity bills. There are no specific targets, locations or timelines set for future programs of this nature.

II. Individual or collaborative efforts by Mexican retailers to promote rapid uptake of energy efficient lighting technology by households. This scenario would entail consumers to responding to increased marketing or promotion of efficient lighting alternatives and purchasing CFLs. The capacity of Mexican consumers to purchase CFLs at retail prices is a significant barrier to this alternative. Based on national income data, for 50% of the working population, purchasing 4 CFLs (at a cost of US$5 per bulb) would require spending between 30% and 99% of their weekly earnings[12]. As is discussed below in the barrier analysis, the relatively high upfront cost of CFLs compared to incandescent bulbs is a major barrier to consumer uptake.

III. Continuation of the current situation is also a possible alternative scenario. The baseline alternatives include either continued use of existing household lighting, or autonomous replacement of current lights with new technologies or measures of either the same or greater efficiency. Achieving the same outcome as the proposed SSC-CPA would entail large-scale autonomous uptake of CFLs by households. As discussed above, autonomous uptake of CFLs is hampered by their cost, and as such the most likely outcome of a continuation of the current situation would be the provision of light for households mainly through the use of cheaper incandescent lamps.

Sub-step 1b Consistency with mandatory laws and regulations

Each of the potential alternatives to the project discussed above:

- The project occurring without being registered as a SSC-CPA through government or private sector support;
- Individual or collaborative efforts by Mexican retailers to promote rapid uptake of energy efficient lighting by households in Mexico;
- Autonomous uptake of energy efficient lighting by households;

are consistent with Mexico's laws and regulations. Each SSC-CPA will therefore not be the only alternative amongst those considered that is in compliance with mandatory regulations.

Step 2. Investment Analysis

Sub-step 2a Determine appropriate analysis method

[12] Encuesta Nacional de Ingresos y Gastos de los Hogares: http://www.inegi.gob.mx/est/contenidos/espanol/sistemas/sisnav/default.aspx?

Each SSC-CPA will involve consumers being provided CFLs free of charge. In this case there are no financial or economic benefits other than CDM related income, as such a simple cost analysis will be undertaken (Option I).

Cash Flow Analysis without CER Income - $US ,000

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
Income without CERs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Expenditures	$2,701	$86	$85	$85	$85	$85	$85	$85	$84	$84	$32	$3,498
Cash Flow	($2,701)	($86)	($85)	($85)	($85)	($85)	($85)	($85)	($84)	($84)	($32)	($3,498)

IRR without CER income = 0%

Cash Flow Analysis with CER Income - $US ,000

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
Income with CERs	$0	$ 464	$ 460	$ 450	$ 441	$ 436	$ 431	$ 422	$ 384	$ 328	$ 258	$4, 074
Expenditures	$2,701	$86	$85	$85	$85	$85	$85	$85	$84	$84	$32	$3,498
Cash Flow	($2,701)	$ 378	$ 375	$ 365	$ 356	$ 351	$ 346	$ 337	$ 300	$ 244	$ 226	$ 577

IRR with CER income = 4.0%
Based on CER price of €12 and US/Euro exchange rate of $1.40.

Clearly, without access to revenue from CERs the SSC-CPA is not financially attractive and will not be implemented.

Step 3 – Barrier Analysis
In accordance with Attachment A to Appendix B of the simplified modalities and procedures for small-scale CDM project activities, a barrier analysis will be undertaken. This analysis will discuss credible barriers that would prevent the implementation of the proposed project activity from being carried out if the project activity was not registered as a CDM activity.

Barriers to the uptake of energy efficient products, including CFLs, are well documented. Such barriers include inadequate access to capital, isolation from price signals, information asymmetry and split-

incentives[13]. That such barriers exist is clear given that CFLs only account for 6% of the global lighting market despite their financial benefits and having been available for several decades[14]. In the context of residential energy efficient lighting, these barriers are particularly apparent.

Access to capital

Particularly relevant for low-income households in developing countries is the fact that CFLs may be up to ten times more expensive than incandescent light bulbs. In the process of prioritising household expenditure towards basic requirements such as food, healthcare and education, there may be very little opportunity for spare capital to be targeted towards investments in energy efficiency. As discussed above, for 50% of the working population earning the lowest wages in Mexico, purchasing four CFLs at approximately US$5 each would require spending between 30% and 99% of their weekly earnings. Despite the financial savings delivered by energy efficiency improvements, the upfront capital requirement acts as a significant barrier to their uptake by low-income households in particular.

Discount rates

In addition to the inability of households to access capital, studies of consumer behaviour towards investments in energy efficient technologies also draw attention to the high discount rates applied, with consumers placing more emphasis on the upfront purchase cost than whole-of-life costs. A range of studies have estimated implicit discount rates applied by consumers to energy efficiency investments range from 25% to 300% across a range of technologies[15]. Particularly relevant in the context of low income households in Mexico, is the observation that low income households apply higher discount rates than more affluent households[16].

Information failures

In Mexico, as in many developed country settings, householders' understanding of the benefits of energy efficiency remains rudimentary. The Mexican government continues to provide information regarding the economic and environmental benefits of investing in energy efficient technologies[17], however, as demonstrated by the case of CFLs, uptake remains low. Barriers to obtaining and applying information relating to energy efficiency are significant, including:

- Time lag between energy consumption and payment of energy bills. Energy price information is divorced from the time at which it is consumed. This time lag can impact the efficacy of price information in influencing consumer awareness and behaviour with regard to household

[13] International Energy Agency (2007), *Mind the Gap: Quantifying Principle-Agent Problems in Energy Efficiency.* Paris, France.

[14] OECD/IEA (2006), "Barriers to Technology Diffusion: The Case of Compact Fluorescent Lamps". Information paper for the Annex 1 Expert Group on the UNFCCC. Paris, France.

[15] Stansad, A, Hanemann, W, and Auffhammer, M (2006), *End-use Energy Efficiency in a "Post-Carbon" California Economy*, 2006. See also, Ruderman, H. et al, (1987) "The Behaviour of the Market for Energy Efficiency in Residential Appliances including Heating and Cooling Equipment", Energy Journal 8(1):101-124.

[16] Hausman, J, Individual Discount Rates and the Purchase and Utilisation of Energy-Using Durables, Bell Journal of Economics: p.10, 1979.

[17] For example see www.fide.org.mx

energy use. In this regard many "consumers act as if they have no control over their electricity bill, and the limited feedback they receive is often too late for them to respond."[18]

– Aggregated energy prices may limit householders' understanding of the individual appliance use and its impact on energy bills. Consumers are not aware of which particular appliance or equipment is contributing to the total price they ultimately pay for electricity for a given period, militating against behaviour change, demand response and investment in energy efficient technologies.

Transaction/search costs

Even where a consumer is able to to obtain information that is accurate, current and complimentary, they must still spend time to identify and assimilate it. There is an opportunity cost associated with the use of one's time to undertake these tasks. A Californai study estimated that if consumers were aware that CFLs could save them money, they would need to take 45 minutes to accurately assess potential savings and locate a shop that sold these lamps. If individuals valued their time a $20/hour, this would more than double the price of the first purchase of this lamp type[19].

Each of the barriers discussed above can be overcome by registering the proposed programme as a CDM activity. Financial barriers such as access to capital and discount rates, are overcome due to the fact that under the carbon finance delivered by the PoA enables CFLs to be provided free of charge to consumers. Similarly, information barriers and high transaction costs will be ameliorated through the media and promotional activities which will direct consumers to distribution centres with clear instructions and information regarding the exchange and its benefits.

Step 4. Common Practice Analysis

Sub-step 4a. Analyse other activities similar to the proposed activity

Energy efficiency in the household sector is a stated strategy of the Mexican Government to address both energy demand issues and greenhouse gas emissions; domestic lighting has been identified as an area where efficiency gains can be made. A brief discussion of activities targeting the take-up of energy efficient lighting is provided below.

Efficient Lighting – Bulk Purchase and Financing of CFLs

Since 1990 Mexican government agencies, in collaboration with a range of multilateral institutions (The World Bank, GEF etc), have undertaken trials and promotions of CFL technology. These programs have focused on bulk purchasing by government institutions, and then on-selling to consumers at low margins, thereby reducing CFL prices to below standard retail levels. In addition, some programs such as those managed by the Trust for Electric Energy Saving (FIDE), have complemented bulk purchasing with consumer finance options such that households are able to pay for CFLs through a levy imposed on energy utility bills[20].

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[18] Productivity Commission, *The Private Cost Effectiveness of Improving Energy Efficiency*, 2005, p.105.

[19] Sathaye, J et al, 2004. *Market Failures, Consumer Preferences and Transaction Costs in Energy Efficiency Purchase Decisions*, California Energy Commission, Berkley.

[20] See http://www.fide.org.mx/english08/06-es.html and "Mexico's Energy Efficiency Financing: Assessment Report", May 2007, APEC Efficiency Valuation Organisation in collaboration with Mexico's National Commission for Energy Conservation (CONAE).

Despite the occurrence of some CFL programmes, penetration of energy efficient lighting nationally remains relatively low. Discussions with local CFL suppliers, as well as analysis of past government programs indicate that penetration of CFLs into domestic lighting in Mexico is approximately 10-20%[21].

Sub-step 4b. Discuss any similar options that are occurring.

Efficient Lighting – Essential distinctions to SSC-CPAs
As discussed above, bulk CFL purchasing programs are currently conducted by Mexican government institutions such as FIDE. However, there are some essential distinctions between these activities and those of a SSC-CPA that support the coordinating entity's claim that the proposed activity is additional. These distinctions primarily relate to the financial structure of these projects:

- The similar activities involve consumers purchasing energy efficient bulbs, utilizing government backed financing mechanisms.
- Products distributed under these programs are still more expensive than the baseline technology (incandescent bulbs).
- Project evaluations indicate that because the up front costs remain high relative to incandescent bulbs, low-income households have generally participated in these programs at lower rates than middle and upper income households[22]. A program assessment undertaken by GEF noted: "The original focus on low-income/low electricity consumers was set aside due to slow sales in that market segment. Overall, 9.6 percent of CFL sales went to low electricity consumers, 31.3 percent to intermediate, and 59.2 percent to high electricity consumer households."[23]. The proposed SSC-CPAs will specifically target low-income households : CFLs will be distributed free of charge.
- The Mexican Government effectively subsidises household purchases of energy efficient products such as CFLs by allowing repayments over time without interest or penalties. SSC-CPAs cannot access such government financing.

Overseas Development Assistance (ODA) Check
SSC-CPAs will not directly use any ODA funds.

A financing plan for the purposes of demonstrating compliance with this component of the Gold Standard additionality screen is provided in Annex 5.

Proof of technology transfer/knowledge innovation
The project involves the transfer of energy efficient technologies into Mexico. This transfer largely occurs "South to South" (between developing countries), in that the CFLs to be used in SSC-CPA are manufactured in China.

[21] This estimate is based on analysis by the coordinating entity of past and present government programs, as well as estimates of standard retail sales. Further details are provided in Annex 3.

[22] World Bank, Report No. 22074, PERFORMANCE AUDIT REPORT MEXICO, page 4, April 12, 2001.

[23] GEF, 2001 "PERFORMANCE AUDIT REPORT MEXICO - MEXICO HIGH-EFFICIENCY LIGHTING PILOT TRUST FUND PROJECT", p.4.

In addition, there will be a transfer of knowledge and capacity from "North to South" (from developed to developing countries). In this instance Cool nrg will train local employees in the development, implementation and management of energy efficiency projects and in the requirements of CDM. Significant intellectual property will be transferred from from staff in the international Cool nrg group (based in Australia, the United States and Europe) to the local Mexican team. This will establish a local business of highly trained energy efficiency CDM professionals.

Further transfer of knowledge will also occur through the education and awareness raising aspects of each SSC-CPA. Individual households will receive information regarding the benefits (financial and environmental) of energy efficiency. This information will empower these households, who will better understand how their consumption behaviour and purchasing decisions relating to energy impact on financial position and the environment. **(14)**

B.4. Description of the sources and gases included in the project boundary and proof that the small-scale CPA is located within the geographical boundary of the registered PoA.

>> The spatial extent of the project boundary is defined by the geographical location of each CFL installed by households participating in the SSC-CPA, and the electricity grid to which these households are connected.

The registered PoA encompasses the entire geographical boundary of Mexico.

Summary of gases and sources included in the project boundary and justification/explanation where gases and sources are not included.

	Source	Gas	Included?	Justification
Baseline	Power plants servicing the electricity grid	CO_2	Yes	
		CH_4	No	Minor Source
		N_2O	No	Minor Source
Project Activity	Power plants servicing the electricity grid	CO_2	Yes	
		CH_4	No	Minor Source
		N_2O	No	Minor Source

B.5. Emission reductions:

B.5.1. Data and parameters that are available at validation:

>>

Data / Parameter:	**L_k**
Data unit:	-
Description:	Estimated number of CFLs to be distributed by the SSC-CPA implementer
Source of data used:	Determined by project participants
Value applied:	1,000,000
Justification of the choice of data or	Actual numbers of devices distributed within the SSC-CPA may vary depending on success of distribution and uptake by households.

description of measurement methods and procedures actually applied :	
Any comment:	

`

Data / Parameter:	$\mathbf{n_{PSG}}$
Data unit:	-
Description:	Total sample size used for monitoring utilisation hours and electricity consumption of CFLs.
Source of data used:	Determined by project participants
Value applied:	240
Justification of the choice of data or description of measurement methods and procedures actually applied :	Within Project Sample Group households enough light fittings will be monitoredto enable data to be captured from 240 lights in order to determine an average hours of utilisation and/or electricity consumption. This sample size will enable a robust assessment of key parameters for the determination of emission reductions. For each CPA of 1 million CFLs distributed, a total sample size of 240 CFLs will be monitored in order to be statistically representative with an error margin of +/- 6.5% at 95% confidence level. Annex 8 ('CUIDEMOS Mexico – Selection of sample groups') provides a detailed description of the statistical methods used to select households for the PSG.
Any comment:	

Data / Parameter:	$\mathbf{n_{PCCG}}$
Data unit:	-
Description:	Total sample size used for checking to ensure ongoing operation of CFLs.
Source of data used:	Determined by project participants
Value applied:	240
Justification of the choice of data or description of measurement methods and procedures actually applied :	Within each household up to four light bulbs will be checked. Data to be captured from up to 240 lights in order to determine the number of CFLs still operational. This sample size will enable a robust assessment of a key parameter for the determination of emission reductions. For each CPA of 1 million CFLs distributed, a total sample size of 240 CFLs will be monitored in order to be statistically representative with an error margin of +/- 6.5% at 95% confidence level. Annex 8 ('CUIDEMOS Mexico – Selection of sample groups') provides a detailed description of the statistical methods used to select households for the PCCG.
Any comment:	

Data / Parameter:	EF
Data unit:	$kgCO_2/kWh$
Description:	Emissions factor for electricity displaced from the grid relevant to the project boundary.
Source of data used:	Official government data – SENER "Prospectiva del sector electrico 2005-2014", "Prospectiva del sector electrico 2006-2015", "Prospectiva del sector electrico 2007-2016"
Value applied:	0.514
Justification of the choice of data or description of measurement methods and procedures actually applied :	Project coordinator has obtained latest data from government sources and applied calculation methodology specified in "Tool to calculate the emission factor for an electricity system" version 1 (EB Report 35, Annex 12). Details of calculations are provided in Annex 12.
Any comment:	

B.5.2. Ex-ante calculation of emission reductions:

>>

Step 1: Baseline Emissions

Because the energy displaced is electricity, the emission baseline is determined as the product of the baseline energy consumption of equipment/appliances and the emission factor for the electricity displaced:

$$BE_y = E_{BL,y} * EF_{CO2,\,ELEC,y} \quad (1)$$

$$E_{BL,y} = \Sigma_i(n_i \,.\, p_i \,.\, o_i) \quad (2)$$

Where:

BE_y	Baseline emissions in monitoring period *y* (tCO_2e)
$E_{BL,y}$	Energy consumption in the baseline in monitoring period *y* (kWh)
$EF_{CO2,ELEC,y}$	Emission factor in year *y* calculated in accordance with the provisions in AMS I.D (tCO_2e /MWh)
Σ_i	the sum over the group of "i" devices (e.g. 40W incandescent bulb, 5hp motor) replaced, for which the substituted energy efficient equipment operating during the monitoring period, implemented as part of the project.
n_i	the number of devices of the group of "i" devices (e.g. 40W incandescent bulb, 5hp motor) replaced for which the substituted energy efficient equipment is operating during the monitoring period.
p_i	the power of the devices of the group of "i" devices (e.g. 40W incandescent bulb, 5hp motor) replaced. In the case of a retrofit activity, "power" is the weighted average of the devices replaced.

o_i the average annual operating hours of the devices of the group of "i" devices replaced.

n_i = 1,000,000 incandescent bulbs replaced

Based on a random number generation model of household lighting wattages the following distribution was achieved:

Incandescent Wattage	Frequency
40	29%
60	25%
75	23.8%
100	22.2%

p_i = 66.66 Watts.

Based on household surveys conducted during the Mexican government lighting project Illumex, average hours of use by Mexican households is estimated to be 3 hours per day.

o_i = 3 hours

Therefore:

$E_{BL,y}$ **= (1,000,000 * 66.66 * 3*365)/1000**
= 72,992,700 kWh

BE_y **= (72,992,700* 0.514)/1000**
= 37,518 tCO_2e

Step 2: Project Activity Emissions

Project emissions consist of electricity and/or fossil fuel used in the project equipment, determined as follows:

$$PE_y = E_{PJ,y} * EF_{CO2,y} \quad (3)$$

Where:

PE_y	Project emissions in year *y* (tCO_2e)
$E_{PJ,y}$	Energy consumption in project activity in year *y*. This shall be determined *ex post* based on monitored values
$EF_{CO2,y}$	Emission factor for electricity or thermal energy displaced. The emissions associated with grid electricity consumption should be calculated in accordance with the procedures of AMS I.D.

Project energy consumption in case of project activities that displace grid electricity is determined

as follows using the data of the project equipment:

$$E_{PJ,y} = \Sigma_k (n_k \cdot p_k \cdot o_k) \quad (4)$$

Where:

Σ_k	the sum over the group of "k" replacement devices operating during the year, implemented as part of the project.
n_k	the number of devices of the group of "k" replacement devices operating during the year.
p_k	the power of the devices of the group of "k" devices distributed to households.
o_k	the average annual operating hours of the devices of the group of "k" devices distributed to households.

n_k = 1,000,000 CFLs bulbs distributed

The following CFL power wattages will be distributed by the SSC-CPA implementer:

CFL Wattage	Frequency
15	59.8%
20	40.3%

p_k = 17.01 Watts.

Based on household surveys conducted during the Mexican government lighting project Illumex, average hours of use by Mexican households was estimated to be 3 hours per day.

o_k = 3 hours

Therefore:

$E_{PJ,y}$ **= (1,000,000 * 17.01 * 3 * 365)/1000**
= 18,625,950 kWh

PE_y **= (18,625,950 * 0.514) / 1000**
= 9,573 tCO_2e

It is assumed that CFLs will fail at the following rate over the 10-year crediting period. This decay in numbers of operating bulbs, and the impact on emission reduction calculations is detailed in Annex 3.

Year	% CFL functioning	Number Operational CFLs
1	99	990,000
2	98	980,000
3	96	960,000
4	94	940,000
5	93	930,000
6	92	920,000

7	90	900,000
8	82	820,000
9	70	700,000
10	55	550,000

Step 3: Emission Reductions

$$ER_y = (BE_y - PE_y) - LE_y \quad (5)$$

Where:

ER_y Emission reductions in year *y* (tCO2e)
LE_y Leakage emissions in year *y* (tCO2e)

ER_y **= 37,518 - 9,573**
= 27,945 tCO_2e

Note that because all incandescent bulbs received will be destroyed, leakage is assumed to be zero. See Annex 3 for a detailed calculation of annual emission reductions.

Ex-ante Calculation of Emission Factor (EF)[24]

OPERATING MARGIN	2004	2005	2006
Total Electricity Generatin (GWh)	208,630	218,971	225,079
% Low Cost/Must Run resources	19.5%	20.8%	21.3%
Total Electricty Generation (ex LC/MR)	167,947	173,425	177,137
Import (GWh)	47	87	523
Tones of CO2e	109,064,257	115,888,509	113,879,260
Emission Factor (tCO2/MWh)	0.649	0.668	0.641

Operating Margin (tCO2/MWh)	**0.653**

BUILD MARGIN	2006
Total Generation in 2005 GWh	225,079
BM Electricity Generation GWh	46,248
BM Tonnes of CO2e	17,336,446
% BM of Total Generation	20.5%

Build Margin (tCO2/MWh)	**0.375**

[24] Source: Prospectiva del Sector Electricos, SENER 2004-2013, 2005-2014, and 2006-2015 and Emisiones del Sector Energetico Report http://www.sener.gob.mx/webSener/portal/index.jsp?id=80

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Combined Margin Emission Factor	0.514

Detailed information and calculations of emissions factor are provided in Annex 12 ('CUIDEMOS Mexico – Emission Factor Calculation').

B.5.3. Summary of the ex-ante estimation of emission reductions:

>>

Year	Estimation of project activity emissions (tonnes of CO_2 e)	Estimation of baseline emissions (tonnes of CO_2 e)	Estimation of leakage (tonnes of CO_2 e)	Estimation of overall emission reductions (tonnes of CO_2 e)
2009	9,479	37,144	0	27,665
2010	9,384	36,769	0	27,386
2011	9,192	36,019	0	26,827
2012	9,001	35,268	0	26,268
2013	8,905	34,893	0	25,988
2014	8,809	34,518	0	25,709
2015	8,618	33,768	0	25,150
2016	7,852	30,766	0	22,914
2017	6,703	26,264	0	19,561
2018	5,266	20,636	0	15,369
Total (tonnes of CO_2 e)	**83,208**	**326,046**	**0**	**242,838**

B.6.1. Description of the monitoring plan:

>> The monitoring requirements of AMS-II.C. stipulate that if the devices installed replace existing devices, the number and "power" of the replaced devices shall be recorded and monitored.

Monitoring shall consist of monitoring either the "power" and "operating hours" or the "energy use" of the devices installed using an appropriate methodology. Possible methodologies include:

(a) Recording the "power" of the device installed (e.g., lamp or refrigerator) using nameplate data or bench tests of a sample of the units installed and metering a sample of the units installed for their operating hours using run time meters.
OR
(b) Metering the "energy use" of an appropriate sample of the devices installed.

In either case, monitoring shall include annual checks of a sample of non-metered systems to ensure that they are still operating.

Based on this methodology, SSC-CPAs will use the following data sources and monitoring procedures to determine emission reductions:

Collection of Incandescent Nameplate Data

The number and power rating of all incandescent lamps collected will be recorded. This information will be used to determine the weighted average power of baseline devices (p_i). Collection of nameplate data from all replaced equipment does not require a sampling procedure, as data on the entire baseline population will be collected. This data will be collected at the time of the exchange of incandescent bulbs for CFLs at distribution points, and stored in the project data management system.

Collection of CFL Nameplate Data

The coordinating entity will keep a record of the power rating of the CFLs distributed during the project activity and use this to determine the weighted average power rating for the project devices (p_k).

Check that numbers of CFLs and incandescent bulbs correspond

As is required by PoAs applying AMS II.C, the number of CFLs distributed under this CPA must correspond to the number of incandescent bulbs collected and scrapped. As is described in greater detail below, for each customer transaction, field teams will collect information on the number and wattage of incandescent bulbs exchanged for CFLs and enter it into the data management system (DMS). Every incandescent bulb received, and every CFL provided will be recorded in the DMS. At the conclusion of the distribution process, the DMS will provide an accurate record of the total numbers of bulbs exchanged. In the unlikely event that there is a discrepancy between the numbers of CFLs and incandescent bulbs recorded in the DMS, the coordinating entity will use the lower of the two numbers so that a smaller total number of bulbs distributed is used for emission reduction calculations for this CPA.

Independent check of scrapped incandescent bulbs

As is required by the methodology, the coordinating entity has engaged the services of a local environmental audit firm to conduct independent verification of the scrapping of incandescent light bulbs collected during the distribution process. Envirosense S.A. de C.V is a private consultant specialized in environmental auditing, consulting and certifications. Incandescent bulbs collected during the distribution will be sent back to the central warehouses of the distribution partners. They will then be transported to the waste management company Servicios Integrales de Residuos SA de CV where scrapping will be conducted. All storage and destruction processes will be independently verified and the result of such process will be presented to the verifying DOE.

The process for undertaking this check will include:

- At least one physical spot check at a randomly selected retail store during the CFL distribution process to ensure that exchange procedures are being followed.
- On completion of the distribution process the independent verifier will conduct an inspection of the project database to ensure that electronic records have been correctly entered and that the number of CFLs distributed corresponds with the number of incandescent bulbs collected.
- A physical spot check will be conducted of incandescent bulbs prior to their destruction in order to satisfy the independent verifier that collection has been undertaken correctly. This check will not include counting of incandescent bulbs, as this is not realistic given the large number of incandescent bulbs being scrapped.
- The independent verifier will then be present while the scrapping of incandescent bulbs is undertaken to ensure that no leakage occurs.

This process will be followed for each CPA, and a written report will be provided to the verifying DOE to demonstrate compliance with this aspect of the monitoring requirements.

Monitoring Use of Project Devices

Monitoring a sample of distributed CFLs to determine average hours of utilisation (o_k) and total energy consumption will be undertaken by installing metering equipment in households belonging to the Project Sample Group (PSG). The annual operating hours of monitored devices will be used to determine the energy baseline as per equations listed above. In addition, the metering devices used by the project coordinator can simultaneously measure total electricity consumption of the CFLs. This measure will be used to determine the project energy consumption for each monitoring period.

The mean hours of use, or total energy use of light bulbs found in the PSG households will be directly extrapolated to all households involved in the CPA. The purpose of establishing the PSG is to create a *representative sample* of all other households participating in the efficient lighting initiative. It is not possible to monitor *all* households involved in the CPA, and it is a fundamentally agreed scientific and statistical procedure to apply mean values obtained through sampling to the broader population. Therefore, for each monitoring period a mean value will be obtained for energy used per project and baseline light bulb which will be extrapolated across the total number of bulbs operating during that monitoring period. This will be used in the calculations of project and baseline emissions as stipulated in the equations provided in sections above.

Establishment of Project Sample Group

The procedure to determine the sample of monitored CFLs will ensure that they adequately represent the broader population, minimising sampling error. Given that participation in the SSC-CPA is voluntary, determination of the exact population of participating households prior to establishment of the PSG is not possible. In addition, because the coordinating entity cannot force households to participate in sample groups, the devices monitored in the resulting sample will be to a degree, self-selected rather than purely random. Despite these limitations, the coordinating entity will work with the DOE to ensure that CFLs sampled are representative of the broader population of lights in participating households.

A detailed description of the statistical methods used to select households for inclusion in the PSG is provided in Annex 8 ('CUIDEMOS Mexico – Selection of sample groups'). This Annex also details strategies to manage sample group households over time to ensure their continued participation.

Establishment of Project Cross-Check Sample Group

A non-metered sample of CFLs installed in participating households will be surveyed at least annually to ensure continuing operation. As with the PSG, the Project Cross-Check Sample Group (PCCG) is likely to be self-selected rather than entirely random, however, the coordinating entity will work to ensure that, as much is feasible, checks cover a representative sample of households that installed CFLs. The households included in the PCCG will be randomly selected from the database of participating households. The result of this sampling will determine the proportion of the total number of devices still operating at the end of each monitoring period (n_k) which will be applied to the calculation of emissions reductions for that period. CFLs distributed under the PoA will be marked with a logo, or serial number to ensure that they can be unambiguously differentiated from other light bulbs installed in the cross-check households.

As discussed above, the results obtained from the sampling process will be directly extrapolated across the entire population of households participating in the CPA. Therefore, the proportion of CFLs installed

and continuing to function as determined through the household cross-check will be taken to be representative of the pattern occurring in all households.

Determination of EF

As stipulated above, the emissions factor for electricity displaced from the grid relevant to the project boundary will be calculated in accordance with AMS-I.D. Data will be sourced from Mexican government agencies to ensure accuracy. A detailed description of the calculation of the emissions factor for the SSC-CPA is provided in Annex 12 ('CUIDEMOS Mexico – Emission Factor Calculation').

Data Management System

The coordinating entity will develop and manage a data management system (DMS) that will record all information relevant to monitoring each SSC-CPA, including:

- A list of households participating in the project, including information to identify households by name and address.
- A record of the incandescent bulbs collected (number and power) surrendered by, and replacement CFLs (number and power) provided to, each participating household.
- A list of households included in the PSG, including information to identify households by name, address and date added to the sample group.
- The following data relating to monitored CFLs:
    - Identification number for each CFL
    - Type of monitoring equipment and date of installation
    - Confirmation at each spot check that monitoring equipment is functioning
    - Confirmation at each spot check that the CFL is functioning
    - Utilization data for each CFL (hours of use and electricity consumption)
- A list of households participating in PCCG and the results of periodic checks of non-metered CFLs. The proportion of CFLs still operating at the end of each monitoring period will be calculated from these cross-checks and entered into the DMS.

Monitoring Periods

Data will be collected for each monitoring period, and used to calculate emission reductions for that portion of the crediting period. The length of each monitoring period will not exceed one year, with surveys of cross-check households to occur at least annually.

It is expected that the CFL distribution process for each CPA will take approximately 30 days. Given that households are requested to bring incandescent light bulbs from their home to exchange for CFLs, it is assumed that installation will occur on the same day as the exchange. However, the coordinating entity will take a conservative approach and will not count energy savings created by households exchanging and installing CFLs during the first 30 days of the CFL exchange period. This means that the first monitoring period will effectively commence 30 days after the start of the CFL distribution process. If the CFL distribution process takes longer than 30 days, bulb exchange data from the project DMS will be applied to determine pro-rata energy savings attributable to the period between day 30 of the campaign, and the conclusion of the distribution period. The coordinating entity is able to accurately determine the number of bulbs exchanged on a daily basis as each transaction is logged with a time and date. This data will be used to determine the cumulative number of bulbs installed and the energy savings attributable to any extended distribution phase (post day 30) of the first monitoring period. At the conclusion of the

distribution process, the total number of CFLs exchanged will be known, and this number will be cross-checked through the household survey that occurs at the end of each monitoring period.

CFL Collection & Recycling Scheme

The coordinating entity is committed to the safe collection, scrapping and recycling of CFLs and will work with key institutions and stakeholders in Mexico to establish such a scheme. The coordinating entity will report to the verifying DOE on the establishment of CFL collection and recycling programs in the area relevant to the SSC-CPA.

C.1. Please indicate the level at which environmental analysis as per requirements of the CDM modalities and procedures is undertaken. Justify the choice of level at which the environmental analysis is undertaken:

x☐ Please tick if this information is provided at the PoA level. In this case sections C.2. and C.3. need not be completed in this form.

C.2. Documentation on the analysis of the environmental impacts, including transboundary impacts:

>>

C.3. Please state whether an environmental impact assessment is required for a typical CPA, included in the programme of activities (PoA), in accordance with the host Party laws/regulations:

>>

SECTION D. Stakeholders' comments

>>

D.1. Please indicate the level at which local stakeholder comments are invited. Justify the choice:

☐ Please tick if this information is provided at the PoA level. In this case sections D.2. to D.4. need not be completed in this form.

D.2. Brief description how comments by local stakeholders have been invited and compiled:

>>For each SSC-CPA, information will be provided as to how comments by local stakeholders have been invited and compiled.

D.3. Summary of the comments received:

>>For each SSC-CPA, a summary of the comments received from local stakeholders will be provided.

D.4. Report on how due account was taken of any comments received:

>>For each SSC-CPA, a report will be provided as to how due account was taken of comments received from local stakeholders.

Annex 1

CONTACT INFORMATION ON ENTITY/INDIVIDUAL RESPONSIBLE FOR THE SMALL-SCALE CPA

Organization:	Cool nrg Mexico S. de R.L. de C.V.
Street/P.O.Box:	Vosgos #220int. 102-B
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Represented by:	Rodrigo Castellanos
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Direct FAX:	As above
Direct tel:	As above
Personal E-Mail:	As above

Annex 2

INFORMATION REGARDING PUBLIC FUNDING

No public funding is used for the SSC-CPAs.

Annex 3

BASELINE INFORMATION

Calculation of Annual Emission Reductions for a typical SSC-CPA distributing 1,000,000 CFLs

	% CFLs Functioning	$E_{BL,y}$ (kWh)	$E_{PJ,y}$ (kWh)	$E_S = E_{BL,y} - E_{PJ,y}$ (kWh)	EF tCO2/MWh	ER tCO2
Year 1	99%	72,265,483	18,442,401	53,823,083	0.514	27,665
Year 2	98%	71,535,529	18,256,114	53,279,415	0.514	27,386
Year 3	96%	70,075,620	17,883,540	52,192,080	0.514	26,827
Year 4	94%	68,615,711	17,510,966	51,104,745	0.514	26,268
Year 5	93%	67,885,757	17,324,679	50,561,078	0.514	25,988
Year 6	92%	67,155,803	17,138,393	50,017,410	0.514	25,709
Year 7	90%	65,695,894	16,765,819	48,930,075	0.514	25,150
Year 8	82%	59,856,259	15,275,524	44,580,735	0.514	22,914
Year 9	70%	51,096,806	13,040,081	38,056,725	0.514	19,561
Year 10	55%	40,147,491	10,245,778	29,901,713	0.514	15,369
				Total		**242,838**

Annex 4

MONITORING INFORMATION

Details of monitoring equipment, data management system and customer database are described in section B.6.1. and in the following Annexes:

Annex 7 – CUIDEMOS Mexico – Monitoring Equipment
Annex 8 – CUIDEMOS Mexico – Selection of Sample Groups.

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